PREPAREDNESS PREVENTION AND CONTINGENCY PLAN (PPC)

WASHINGTON COUNTY

Range Resources Appalachia, LLC
380 Southpointe Blvd., Suite 300
Canonsburg, PA 15317

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Revised October 2009

Table of Contents

APPENDICES

1.0 EXECUTIVE SUMMARY

This Preparedness Prevention and Contingency (PPC) Plan is prepared for Range Resource Corporation's operations in Washington County, Pennsylvania. The sites are identified in the drilling permit applications, which will be located in Washington County. This PPC Plan was developed in accordance with PA DEP Guidelines #400-2200-001/September 2001, *Guidelines for the Development and Implementation of Environmental Emergency Response Plans.*

This PPC Plan is an integral part of the operation's environmental, health and safety program. It is designed to provide for foreseeable workplace occurrences and provide the response framework for those occurrences, which have the potential for employee injury or environmental damage. It contains program elements designed for prevention/control of accidental discharges of regulated substances. Further, the plan is designed to be flexible, with established guidelines, and will be reviewed on a regular basis to assure the plan is a current, viable, and useful tool.

Mr. Ralph Tijerina is the administrator of this PPC Plan and is responsible for implementation and maintenance. Reviews and revisions of this plan will be completed annually unless plan failure, operational changes, or regulatory revisions necessitate otherwise. Any questions, comments, or suggestions regarding this PPC Plan should be directed to Mr. Ralph Tijerina.

Authorized for Implementation:

Ralph Tijerina

Director - Environmental Health and Safety

10/14/2009
Date Implemented

2.0 PLAN REVIEW RECORD

The following table is a record of the periodic revisions made to this plan since the original date of plan implementation. It is required by the PADEP that the plan be reviewed annually. This plan will also be reviewed and revised if any of the following occur:

- An applicable regulation is revised;
- The plan fails in an emergency;
- There is a change in the design, construction, operation, or maintenance that materially affects the operation's potential for discharge;
- The list of emergency coordinators changes;
- The list of emergency response equipment changes; or
- As otherwise directed by an applicable agency.

Date	Revision	Signature	Comments
1-1-2009	1A		Update
10/2009	2		Added Appendix D and Appendix E and Updated Plan

3.0 DESCRIPTION OF SITES

3.1 Description of the Industrial or Commercial Activity

Activity to be conducted at these sites will include, but not be limited to, the construction of the access road to the well-site and the pad on which the drilling operation will be conducted, drilling of the borehole following the casing design and strategic analysis described in the Drilling Permit Application, completing and fracing of the well, flowback operations and production. The operation will be at various locations as described in the drilling permit applications for wells within Washington County. All coordinates for each borehole are stipulated in the drilling permit applications.

- The average constituents of the NGL are propane (18.28%), butane (24.59%), iso-butane (7.32%), and pentane and longer chain hydrocarbons (49.81%).
- The operation's North American Industry Classification Systems (NAICS) code is 211111 (Crude Petroleum and Natural Gas Extraction).

3.2 Description of Existing Emergency Response Plans

This plan is compatible with existing emergency response and spill prevention plans. The operations and subcontractors maintain a Spill Prevention Control and Countermeasure (SPCC) Plan compliant with 40 Code of Federal Regulations Part 112.

3.2.1 Assessments of Impacts on Downstream Water Supplies or Water Wells in Area

As part of the plan to ensure that no impacts occur to either downstream water supplies or water wells, an assessment of all water sources within a 1000 ft radius of the well site will be conducted by identifying the location and samples will be taken to establish a baseline for the water quality prior to any activity.

The samples will be collected and tested by a state certified water-testing laboratory in order to assure an independent objective assessment. These test results will be maintained in the well file for future reference if they are required for comparison to samples taken after our activity is completed.

Best Management Practices (BMPs) will be in place to prevent the contamination of any water supply either downstream surface water supply or an identified water well. Pre-drill water sampling will be conducting in accordance with established sampling and analytical protocols.

Well Control Guideline plans include the use of equipment to contain any large amounts of water which may be required to contain or control any fires should the need exist.

During the drilling and completion process, all returned fluids will be contained in a lined reserve pit, 500 bbl frac tanks, or large lined impoundments to prevent any run-off that could cause contamination to existing water wells or surface water.

3.3 Materials and Waste Inventory

3.3.1 Liquid Storage Description

- 5 gal pails
- 55 gal drums
- 500 gal intermediate bulk containers
- 20,000 gal max diesel storage

3.3.2 Dry Bulk Storage Description

- 50 lb sack chemicals
- 55 lb sack chemicals
- 100 lb sack chemicals
- 1 ton bulk bag

The following products are used for the operations described above, but are subject to change based on the circumstances encountered during the development of the project. The MSDS for each product are required to be on site while any chemical is staged on location.

MC M-8650
MC MX 525-5
MCSS 5359
MC MX S-2510T
B-8650
S-2510T
K 34
HCL Acid Plus Inhibitor and Surfactant
BC 140
Delta Frac 140FE-1A Acidizing Composition
FR-46
HAI-OS Acid Inhibitor
Hydrochloric Acid 5-10%
X-TEND II
Sodium Chloride
Potassium Chloride
Ultrahib
Ultracap
Polypac UL/ELV
DUO-Vis/ XCD Polymer
Ultrafree
M-I Bar
Aldacide G Antimicrobial
Bara-Defoam 1
Barazan D Plus
Bariod
Bicarbonate of Soda
Bore-Hib
Bore-Plus
Bore-Vis
Bore-Vis II
Calcium Hypochlorite – Hydrated
Caustic Soda
Citric Acid
Clay Grabber
Clayseal Plus
Dextrid LT
Pac L
Polyac Plus
Diesel Oil
CI-14
Ferrotrol 300L
XLW-32
GW-3LDF
GBW-20C
BF-7L
GBW-15L
FRW-14
FRW-25
Alpha-125
Methanol
40 HTL
NE 100
FE 100L
HVG-01
B9
BXL-2
ICI-3240
ICI-150
FRW-50
FRW-25
Iron Check
Unilink
GBL-8X
Unigel 19XL
FRP-21
Bioclear 200
AI-2
IC-100L
OB-Fe
Super OW-3
Super Pen 2000
Super 100NE
Bioclear 200
SAS-2

3.3.3 Waste

Waste accumulated on site will be collected and disposed of in the manner required by the Pennsylvania Department of Environmental Protection, dependent upon the classification. Waste will be minimized by the utilization of larger packaging containers. Where possible, intermediate bulk containers will be used as they can be reutilized instead of using drums thus resulting in minimal waste products.

Municipal Waste
Containerization via Waste Management

Produced/ Frac/ Pit Water
All produced water, including drilling water, flowback water, and produced brine will be collected and either disposed according to the appropriate regulations at a permitted disposal facility or underground injection well, or will be recycled. If being disposed at a permitted disposal facility or underground injection well, one of the following companies may be used to transport the water to one of the disposal sites identified in Section 6.6:

R.T.I.
Highland Environmental Sanitation
MJ Water Co, Inc
Woods Trucking
Ted Stutzman
Devonian Industries, Inc
Burkholtz Welding
Stallion Oilfield Services
Force

If the water is being recycled, the water will be either trucked to the appropriate impoundment or pumped through aboveground piping. If the water is being transported via trucking, one of the companies detailed above may be used to transport the water to the permitted impoundment. If the water is being pumped through aboveground piping, An RRC approved water transfer

contractor will be utilized to pump the water through the aboveground piping to the permitted impoundment.

3.4 Pollution Incident History

There is little history pertaining to any pollution incidents for the area covered by this PPC Plan. Completed records of past and future occurrences with spill reporting and response shall always be included in Appendix C.

Should a spill occur, the following information will be recorded and maintained for five years:

1. Date and time of incident;
2. Location of incident;
3. Name of individual discovering the incident;
4. Product released and amount released;
5. Causes of the spill, including failure analysis;
6. Corrective actions and/or countermeasures taken and additional preventative measures taken or contemplated.

3.5 Implementation Schedule for Elements Not Currently In Place

As of the signature dates on page 1 of this plan, all elements of this plan are currently in place.

4.0 DESCRIPTION OF HOW PLAN IS IMPLEMENTED BY ORGANIZATION

4.1 Organizational Structure of Facility for Implementation (Pollution Prevention Team)

The operational headcount on site will be no more than 30 personnel at any given time which includes both Range Resources Corp and its subcontractors. The primary emergency coordinator's duties and responsibilities will be as follows:

1. Risk management and inventory of materials,
2. Establishment of all spill-reporting duties,
3. Implementation of visual inspection procedures,
4. Review of past incidents and actions taken,
5. Implementation of plan goals,
6. Coordinate all spill clean-up activities,
7. Notification of all necessary authorities,
8. Education and training of all on-site personnel,
9. Evaluation of plan and change as needed,
10. Review any changes relative to the current plan,
11. Evaluate overall effectiveness of plan, and
12. Review and update the plan on a regular basis and make changes as necessary.

Changes made to the plan which affect personnel will be communicated at the earliest available time, generally during safety meetings and put into practice as part of standard operating procedures, where necessary. Where mentoring or extended training is required for the individuals to gain experience, a mentoring system will be put in place and On-The-Job training will be documented.

4.2 List of Emergency Coordinators

The following table shows a list of the Emergency Coordinators for Range Resources Appalachia, LLC, Washington County.

All calls to report an emergency or contact one of the Emergency Coordinators should be to:

(866) 768-4756

Emergency Coordinators

Name	Title
Mr. Ralph Tijerina	Director - Health, Safety and Environmental
Mr. Craig Wyda	Sr HSE Technician
Mr. Mike Farris	Manager – Health, Safety, and Environmental

In the event the Primary Emergency Coordinator is not present at the time of an emergency, the designated alternate individuals will accept those responsibilities.
In the rare event none of the above personnel are present; the ranking supervisor on-site will be in charge of the facility until the appropriate personnel can be contacted. All supervisory personnel who may be in charge of the facility will be trained in the proper response procedures in the event of an emergency.

Emergency phone numbers along with site lat/long coordinates will be clearly posted on-site.

4.3 Duties and Responsibilities of Emergency Coordinators

The Emergency Coordinator is responsible for the review of existing materials, storage of materials and the necessary recommendations/upgrades to update the PPC Plan, if appropriate.

If the Emergency Coordinator determines that the site has had an emission, discharge, fire, or explosion, which would threaten human health or the environment, the Emergency Coordinator must immediately notify:

- Southwest Region of the Pennsylvania Department of Environmental Protection (412-442-4000);
- Pennsylvania Department of Environmental Protection Oil & Gas Inspector;
- National Response Center (800-424-8802); and
- Pennsylvania Emergency Management Agency (717-651-2001); and report the following:
    - Name of person reporting incident,
    - Name and location of the facility,
    - Phone number where the person reporting the spill can be reached,
    - Date, time, and location of the incident,
    - A brief description of the incident, nature of the materials involved, extent of injuries, and potential effects on health or the environment,
    - Estimated quantities of the materials involved, and
    - The extent of contamination of land, water, or air, if known.

During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fire, explosion, emission, or discharge do not occur, reoccur, or spread to other materials or wastes at the site. These measures shall include, where applicable, stopping operations, collecting, and containing released materials or wastes, and removing or isolating containers.

If the facility ceases operations in response to a fire, explosion, emission, or discharge, the Emergency Coordinator must ensure that adequate monitoring is conducted for leaks, pressure buildup, or ruptures in valves, pipes, or other equipment, wherever it is appropriate.

4.3.1 Duties after an Emergency

Immediately after an emergency, the Emergency Coordinator, with Pennsylvania Department of Environmental Protection (PA DEP) approval, must provide for treating, storing, or disposing of residues, contaminated soil, etc., from an emission, discharge, fire, or explosion at the site.

The Emergency Coordinator must ensure that in the affected areas of the site, no material or waste incompatible with the emitted or discharged residues is processed stored, treated, or disposed of until cleanup procedures are completed; and, all emergency equipment listed in the plan is cleaned and fit for its intended use before operations are resumed.

Within fifteen (15) days of the incident, the facility will submit a written report on the incident to the PA DEP.

4.4 Company Officials

The Emergency Coordinator will notify the following company officials, if appropriate:

Range Resources – Company Officials

Name	Title	Telephone Number
Mr. John Applegath	Vice President - Operations	(724) 678-7054
Mr. Matt Curry	Director – Engineering and Development	(724) 678-8051
Mr. Scott Roy	Vice President – Government and Regulatory Affairs	(717) 329-3441
Mr. Ray Walker	Vice President – Shale Appalachia	(724) 822-0916

5.0 SPILL OR LEAK PREVENTION AND RESPONSE

5.1 Pre-Release Planning

The sources for potential spills/leaks for these sites are from aboveground storage tanks, impoundment ponds, drum and intermediate storage containers, and above ground piping which are summarized in Table 5.1.

The properties where most sites reside are situated on gentle slopes though all efforts will be to remain on level property. Where the landscape is sloped, the natural flow would be in any given location. Pre-planning addresses the potential hazards and ensures that measures will be taken to minimize any exposures which may occur. Therefore, most small spills would not travel far over the porous gravel surface.

GENERAL DECRIPTION OF LOCATION

The location of each well site is defined in the Drilling Permit Application and depicted in the adjoining topography map. However, each road and site pad will be constructed in a manner which minimizes the disturbance of land and will follow the Erosion and Sedimentation Control Plan, and where applicable, the ESCGP-1 permit. . The traveled areas will maintain a top layer of rock to stabilize the property.

Any centralized impoundments will be designed and constructed in a manner to maintain an interior slope of 3 horizontal to 1 vertical (3H:1V); exterior slopes of 3H:1V; a bottom slope of approximately 1% and a minimum berm width of 12 ft. These standards are the minimum standards for these types of impoundments and will follow the guidelines developed and required by the PA DEP.

5.2 Pollution Incident Prevention Practices

5.2.1 Fail Safe Engineering

There are many safeguards that are followed in all of our operations to prevent the accidental discharge of material. Many of the storage tanks are equipped with means to gauge the volume in the tank at any given time. Secondary containment according to the contractor's SPCC Plan will be required to ensure that any spills are contained. Refer to Section 5.2.3 of this PPC Plan for details of secondary containment. The BOPs will be operable during activities involved in the drilling and completion of the well to prevent blowouts should excess back pressure be experienced.

5.2.2 Preventive Maintenance

Preventative maintenance involves the regular inspection and testing of the equipment and operational systems. A preventative maintenance program emphasizes the upkeep and maintenance of systems, which could, upon breakdown or failure, result in conditions that could cause environmental degradation or endangerment of public health and safety. If any deficiencies and/or leaks are discovered during the following preventative maintenance activities, the deficiencies are promptly corrected and any spilled material is immediately cleaned up. Site Inspection Checklist Forms are included in Appendix B.

- **Visual Observations** - The site is manned 24 hours a day and visual inspections will be conducted throughout.
- **Detailed Inspections and Monitoring**– See Section 5.4, Inspection and Monitoring Program for a list of detailed inspections.

5.2.3 Discharge and Drainage Control

- **Secondary Containment**
  - Two to three above ground storage tanks with volumes of 210 bbls (8820gal) each will utilize secondary containment as defined in the SPCC Plan
  - Frac tanks will vary in volume according to the requirements of the project. Those containing any hazardous materials will be diked accordingly to minimize run off.

- **Vapor Control**
  - Provided by pressure relief valves/fittings as appropriate.

- **Dust Control** (Not applicable at this operation)

5.2.4 Mitigation

Personnel are provided with proper protective clothing and eyewear. Cleanup will be performed with brooms, shovels, and absorbent materials for small spills, and outside contractor services for large spills.

5.2.5 Ultimate Disposition of Contaminated Materials

All contaminated soils, sorbents, and waters are disposed of through properly permitted subcontractors.

5.3 Material Compatibility

Materials held in inventory are stored properly to ensure material compatibility. Incompatible materials should be recognized and individuals working at the facility should be properly informed through signage, training, etc.

An inventory of the materials stored at the facility was taken and the corresponding Material Safety Data Sheets were collected. The chemicals comprising the Engine oil, Hydraulic fluid, Methanol Inhibitor, and Antifreeze were entered into a chemical reactivity prediction program. The Chemical Reactivity Worksheet Version 1.9, developed by the CAMEO (Computer Aided Management of Emergency Operations) Team at the Hazardous Materials Research Branch of the Office of Response and Restoration at the National Oceanographic and Atmospheric Administration (NOAA) and the Chemical Emergency Prevention and Preparedness Office at the U.S. EPA was used to predict if a reactivity hazard may occur from a scenario where two materials were mixed. The computer model did not predict any unsafe reactions between the materials kept in inventory. The computer model cannot predict reactions from three or more chemicals mixing at once.

5.4 Inspection and Monitoring Program

Inspections are made to check for leaks and potential hazardous areas and are documented on the checklist provided in Appendix B of this Plan. Specific inspections are performed as follows:

- Observing the exterior of ASTs, and other equipment for signs of deterioration, leaks, corrosion, and thinning.
- Checking the inventory of discharge response equipment and restocking as needed.

AST integrity inspections should be performed at intervals and specifications according to industry standards for the type of tanks present at the facility.

5.5 Brittle Fracture Evaluations and Preventive Maintenance

There are no field-constructed tanks that will be utilized on site.
Inspections will be conducted for the following, which could result in contamination of the work area or environment:

- Leaks in containment systems, tanks and piping
- Proper function of transfer pumps and isolation valves
- Condition of material handling equipment

Preventative maintenance will be performed on any areas found to be deficient as part of these inspections. This corrective action will be accomplished and documented. This documentation and the original inspection report will be retained in accordance with the requirements of this plan.

5.6 Housekeeping Program

The following items will be performed as part of facility housekeeping:

- Equipment, packaging materials, and miscellaneous materials will be inspected for leaks, oily surfaces, etc. Deficiencies shall be promptly corrected.
- Areas where materials are unloaded, transferred, or loaded will be kept free of debris.
- Cleanup, storage, disposal, and inspection procedures will be reviewed with facility personnel as part of the training requirements of this plan.
- Housekeeping conditions will be included in the facility inspections conducted in accordance with this plan.

5.7 Security

During various activities in the development of the well-site, there will be a need for security to be present at the entry point to the well site. During these periods, visitors are required to sign in and authorization will be required should they arrive unexpectedly. Only authorized personnel will be allowed on the site. When security personnel are not on site to guard the entrance, Range's person in charge on-site will be responsible for managing personnel arriving on site.

5.8 External Factor Planning

Employees are trained in procedures that are in place for emergency situations. Power outages, floods, and/or snowstorms may prevent operations from continuing, but should not result in an incident that would have an adverse effect on public health or the environment. Power outages do not increase the likelihood for release of pollutants and do not affect spill prevention measures, or spill containment, cleanup, and removal operations.

In the event of an external emergency situation, no operations involving regulated material transfer will be initiated at the site.

5.9 Training Program

Employee training shall be conducted periodically to ensure that all responsible employees are knowledgeable of emergency and spill response procedures. All employees with responsibilities under this plan shall receive annual training in the following areas, as required:

- Knowledge of the basic hazard and risk assessment techniques.
- Know how to perform basic control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available with their unit.
- Know how to implement basic decontamination procedures.
- An understanding of the relevant standard operating procedures and termination procedures.

Employees completing the training shall be capable of demonstrating competency in the above training elements. Elements of the plan that enhance the prevention and management of environmental and safety incidents should also include and provide for training in these areas:

- Housekeeping
- Material Management Practices
- Loading and Unloading Procedures
- Site Emergency and Evacuation Procedures
- Preventative Maintenance
- Visual Inspections

This training shall be documented and included in the employee personnel files. A sufficient number of personnel shall be trained to ensure that personnel are capable of responding effectively to emergencies and to satisfactorily accomplish an evacuation of the facility if required.

6.0 COUNTERMEASURES

6.1 Countermeasures to be Undertaken

Spills of liquid material (mineral oil or aliphatic hydrocarbon) may occur from storage tanks, flow loop, equipment leaks, or spills during transfer. In the event of a spill or release, designated personnel will take the following steps:

6.1.1 Petroleum-Based Release or Hazardous Material Response Procedures: Minor Release

In the event of a minor release of oil or petroleum product to the environment, the following emergency response procedure will be conducted. A minor release is defined as a release of **less than 25 gallons** of oil product and/or less than the reportable quantity of a material to an aboveground surface, which is contained to the immediate area and does not adversely impact human health and the environment, and **does not immediately threaten groundwater or surface water**. In the event of a minor release, the following procedure will be conducted if personal safety is not at risk:

- Upon discovering a spill, the employee must immediately notify the Emergency Coordinator.
- The Emergency Coordinator will determine if the spill cleanup is within the capabilities of the Range Resources personnel to contain.
- The Emergency Coordinator may initiate the following activities, if deemed appropriate:
    - Shutdown all facility operations; and
    - Invoke evacuation of the facility.
- If the determination is made that Range Resources personnel can respond to the spill safely, then booms, spill stoppers, and absorbent materials will be deployed to contain the spill and prevent the released material from migrating.

- The Emergency Coordinator will make the necessary notifications to key Range Resources personnel, local emergency agencies, and the spill response contractor, as required.
- Call a spill response contractor listed in Section 7.1, if the on-site personnel are unable to control the release or if cleanup is necessary.
- Notify the National Response Center (1-800-424-8802) to report the release if the released material is capable of reaching navigable waters. A listing of the Emergency Response telephone numbers is provided in the Section 7.1 and 7.2.
- Assess the area to ensure that human health and environmental hazards have been mitigated.
- Complete an incident report and update the PPC Plan and the SPCC Plan. Refer to Appendix A for a copy of the Incident Report Form.

6.1.2 Petroleum-Based Release or Hazardous Material Response Procedures: Major Release

A major release is defined as a release of **25 gallons or greater** of oil product and/or over the reportable quantity of a material to the environment or a release which **immediately threatens groundwater or surface water.** In the event of a major release where the material cannot be controlled, contained or mitigated by facility personnel, the following procedure will be implemented:

- If imminent danger exists, immediately notify everyone at the facility. Engage appropriate evacuation procedures, as necessary.
- Upon discovering a spill, the employee must immediately notify the Emergency Coordinator.
- The Emergency Coordinator will determine if the spill cleanup is within the capabilities of the Range Resources personnel to contain.
- The Emergency Coordinator may initiate the following activities, if deemed appropriate:
    - Shutdown all operations; and
    - Invoke evacuation of the site.

- If the determination is made that Range Resources personnel can respond to the spill safely, then booms, spill stoppers, and absorbent materials will be deployed to contain the spill and prevent the released material from entering the nearest down-gradient storm drain.
- The Emergency Coordinator will make the necessary notifications to key Range Resources personnel, local emergency agencies, and the spill response contractor, as required.
- Call a spill response contractor listed in Section 7.1, if the on-site personnel are unable to control the release or if additional cleaning is necessary.
- Notify the National Response Center (1-800-424-8802) to report the release if the released material is capable of reaching navigable waters. A listing of the Emergency Response telephone numbers is provided in Section 7.1 and 7.2.
- Contain the released product with all available equipment. All spent absorbent material will be placed in appropriate containers and properly transported off-site for disposal.
- Assess the area to ensure that human health and environmental hazards have been mitigated.
- Complete an incident report and update the PPC Plan and SPCC Plan. Refer to Appendix A for a copy of the Incident Report Form. Notify the Emergency Coordinators and/or Acting Emergency Coordinators. A listing of the Emergency Response telephone numbers is as follows.
  - **Spill response contractor** listed in Section 7.1, if the on-site personnel are unable to control the release or if cleanup is necessary.
  - **National Response Center (1-800-424-8802)** to report the release if the released material is capable of reaching navigable waters.
  - **Pennsylvania Department of Environmental Protection (PADEP) (412-442-4000)** within 30 minutes of a major release.
  - **Pennsylvania State Police (911)** within 30 minutes of a major release.

6.2 Countermeasure to be Undertaken by Contractors

A release that cannot be contained, controlled, and/or cleaned up by on-site personnel will require assistance from an emergency contractor listed in Section 7.1. The emergency contractor will take all necessary measures to contain, control, and/or clean up the release.

6.3 Internal and External Communications and Alarm Systems

During a spill or release, cellular telephones, 2-way radios, voice, and/or hand signals are utilized to provide immediate instruction to facility personnel. Telephones are utilized to communicate with emergency contractors and emergency response agencies in the event of a spill or release.

6.4 Evacuation Plan for Facility Personnel

In the event of a spill or release beyond a minor incident, all visitors and personnel not essential to the control and cleanup operations will evacuate the area. These individuals will exit the facility through the nearest available exit and proceed to the assembly point identified by the Emergency Coordinator (if possible, an area upwind and uphill from the incident). Employees can exit the facility by means of one (1) access road and travel in either direction along public roads to a place of safety. Signals used to begin evacuation will be voice or radio. At the assembly point, the Emergency Coordinator or their designee will be responsible for a head count to ensure that all personnel have been accounted for.

6.5 Emergency Equipment Available for Response

Emergency equipment is maintained in proper working order, clearly labeled, and stored in strategic locations. Emergency equipment includes, portable fire extinguishers (periodically tested), spill control equipment, and first aid supplies. The spill control equipment is maintained in spill kits containing the following materials.

- 55 Gallon Drum
- Personal Protective Equipment- Nitrile gloves, Poly Tyvek, Overboots
- Oil absorbent pads, 4" oil absorbent boom, and oil absorbent granular floor dry.

If additional equipment is needed, an Emergency Response Contractor listed in Section 7.1 will be contacted to assist in containment and cleanup efforts.

After an emergency, all the equipment used will be decontaminated, cleaned, and inspected for proper working order before normal operations resume.

6.5 Emergency Equipment Maintenance and Decontamination

All equipment used for emergency procedures shall be kept in satisfactory condition and maintained and or replaced as needed. All contaminated tools or equipment shall be properly cleaned or disposed. Emergency equipment shall be tested for proper working order and be replaced as necessary.

6.6 Disposal

Waste oils, fuels, and contaminated rainwater collected at the facility as a result of a spill that cannot be recovered will be properly disposed at an appropriately permitted facility. Some liquids may also be re-used. Disposal Sites in which produced water disposed of are as follows:

Liquid Assets Disposal (LAD)
New Castle Environmental
Franklin, PA Brine Treatment Plant
Tunnelton Liquids
Eureka Resources

6.7 Regulatory Agency Reporting

An incident report form is provided in Appendix A, and will supply required information for federal, state, and local authorities as required.

6.7.1 Federal Reporting

The facility will notify the appropriate regulatory agencies and submit the current Spill, Prevention, Control, and Countermeasures (SPCC) Plan to the USEPA Region III Regional Administrator and other appropriate regulatory agencies if either of the following occurs at the subject site:

- The site discharges more than 1,000 gallons of oil into or upon the navigable waters of the United States or adjoining shorelines.
- The site discharges oil over 42 gallons in two spill events within any 12-month period.

The following information will be provided to the agencies within 60 days of a reportable spill:

- Name of the facility,
- Name(s) of the facility owner/operator,
- Location of the facility,
- Date and year of initial facility operation,
- Maximum oil storage or handling capacity and daily throughput,
- Description of facility, including maps and diagrams,
- Complete copy of the PPC and/or SPCC and amendments,
- Cause of the spill, including failure analysis, and
- Corrective actions and/or countermeasures taken.

6.7.2 State Reporting

An incident report form that will supply required information for federal, state, and local authorities is included in Appendix A.

Within fifteen (15) days of a reportable incident, the Facility will submit a written report to the PA DEP. A reportable incident includes the following:

- The facility discharges any quantity of oil or regulated substances that immediately threatens groundwater or surface water.
- The facility discharges at least 25 gallons of oil or a regulated substance onto an aboveground surface.
- A release of a hazardous substance to an aboveground surface that exceeds its reportable quantity under the Comprehensive Environmental Response, Compensation, and Liability (CERCLA) Act of 1980 and 40 CFR Part 302 (relating to designation, reportable quantities, and notification).
- A release of brine with a Total Dissolved Solids concentration less than 10,000 mg/L of 15 gallons or more.
- A release of brine with a Total Dissolved Solids concentration greater than 10,000 mg/L of 5 gallons or more.

The following information will be provided to the PA DEP within 15 days of a reportable spill:

- Name, address, and telephone number of the installation,
- Date, time, and location of the incident,
- A brief description of the circumstances causing the incident,
- Description and estimated quantity by weight or volume of materials or wastes involved,
- An assessment of any contamination of land, water, or air, which has occurred due to the incident,

- Estimated quantity and disposition of recovered materials or wastes that resulted from the incident, and
- A description of what actions the installation intends to take to prevent a similar occurrence in the future.

6.8 Fire Suppression System

Fire extinguishers are inspected periodically. These extinguishers are placed in strategic locations throughout the site. All fire extinguishers on site are complaint with American National Standards Institute (ANSI) criteria for responding to ABC class fires. These systems will be used only for small and immediately confined (first responder) fires. In all other incidents, the local Fire Department listed in Section 7.1 will be contacted to combat the fire.

6.9 Medical and Fire Emergency Plans

In the event of a medical emergency, the Emergency Coordinator must request outside emergency medical services and transportation to local hospital emergency room. Refer to Section 7.1 for emergency contact phone numbers. Contaminated individuals will be removed from the site and gross contamination will be removed by taking or cutting off their clothing.

If there is imminent danger, the Emergency Coordinator will evacuate personnel. Upon evacuation of the site, all employees, except those with emergency responsibilities, are to go to a location designated by the Emergency Coordinator which is upwind of the incident location and remain there until a head count can be taken. Under no circumstances are employees to go home until given approval to do so by the Emergency Coordinator or a designated representative.

7.0 EMERGENCY SPILL CONTROL NETWORK

7.1 Arrangements with Local Emergency Response Agencies and Hospitals

In the event of an accident, spill, or release requiring outside assistance, the following emergency response contractors, agencies, and hospitals are available to assist the facility.

Medical Agencies	
Washington Hospital	(724) 225-7000
Ohio Valley Hospital	(740) 283-7000
Canonsburg Hospital	(724) 745-6100
Washington Hospital – Burgettstown Medical Plaza	(724) 947-6261
Southwest Regional Medical Center	(724) 627-3101
St. Clair Hospital	(412) 561-4900

Ambulance Service	
South Franklin Township Ambulance and Chair	(724) 225-8050
Fort Cherry Ambulance	(724) 926-7200

Emergency Contacts	
All Emergencies	**911**
Waynesburg Fire Department	(724) 627-5426
Chartiers VFD	(724) 745-9477
Fire: Hickory Fire Department	(724) 356-7801
Police: Hickory Police	(724) 356-7917

Emergency Response Contractors	
Spills: Weavertown Environmental Group	(800) 746-4850
Alex E. Paris	(724) 947-2235
Pipelines: Alex E. Paris	(724) 947-2235
TEAM Industrial Services Inc.	(800) 662-8326

7.2 Notification Lists

The Emergency Coordinator will notify the following company officials, as appropriate:

Range Resources – Company Officials

Name	Title	Telephone Number
Mark Hansen	Vice President - EHS	(817) 869-4217
Ray Walker	Vice President – Shale Appalachia	(724) 743-6700
John Applegath	Vice President - Operations	(724) 743-6700

The following list of government agencies and emergency organizations will be notified, as required, depending on the emergency and required response:

Emergency Management Contacts

Reporting Agency	Telephone Number
Weavertown Environmental 24-Hour Emergency Response	(800) 746-4850
Alex E. Paris 24-Hour Emergency Response	(724) 947-2235
County of Emergency Management Agency Washington County [Monday – Friday 8:30 a.m. – 4:40 p.m.] *Nights and weekends all calls are forwarded to 911	(724) 228-6911
PA DEP Regional Office	(412) 442-4000
PA Emergency Management Agency	(717) 783-8150
PA DEP Emergency Hotline	(800) 541-2050
National Response Center (Only if the spill leaves the property and is likely to enter navigable waters)	(800) 424-8802
PA Fish Commission Waterways Patrolman	(814) 445-8974

A written follow-up requirement is required within 15 days after reporting the spill. This written report should be mailed to the agencies with the exception of the National Response Center, which does not require a written follow-up. An incident report form that will supply all of the

required information for federal, state, and local authorities and mailing addresses is included in Appendix A.

7.2.1 Notification Protocol

The following narrative should be followed for making initial verbal contact with any Emergency Agency:

> "This is ***[state your full name]*** with Range Resources – Location Coordinates. We have an emergency. Our emergency is a ***[specify type of emergency.]***"
>
> **FOR PRODUCT SPILL:**
>
> It is estimated that ***[state quantity]*** of ***[state product]*** has been released.
>
> The spill is ***[contained/not contained].***
>
> The release occurred at ***[state time – a.m./p.m.]*** and lasted for approximately ***[state period of time].***
>
> The medium or media into which the release occurred is ***[state air, water, ground etc.].***
>
> The number of people known to be involved in the emergency is ***[state number].***
>
> There are ***[state number]*** of injuries known at this time.

WAIT FOR OTHER PARTY TO HANG UP FIRST!

7.3 Downstream Notification

Not applicable at this facility.

8.0 STORMWATER MANAGEMENT ACTIVITIES

No stormwater drains are located at the sites identified in the Drilling Permit Application. Intermittent or perennial waterways within the anticipated area of influence, in the event of a release at the site, will be identified and mitigated

The procedures for site housekeeping and inspections programs, are considered to be reasonable and appropriate, and are consistent with Best Management Practices for this type of site in regards to stormwater management.

9.0 EROSION AND SEDIMENTATION PREVENTION

During construction or earth disturbance, the control of sediment migration and erosion is addressed by installing silt fences where appropriate and promptly covering disturbed land with topsoil and seed.

Where required, an Erosion and Sedimentation Control General Permit 1 will be obtained from the PADEP. An Erosion & Sedimentation Control Plan will be prepared for each site where earth disturbance activities will occur and will contain the following:

General Information
Project Description
Erosion & Sedimentation Control
Staging of Activities
Maintenance Program
Seeding, Mulching & Soil Conditioning
Hydrology
Soil Maps
Soil Information
Location Map
Exhibits

- Access Road Construction
- Construction Entrance
- Roadway Drainage
- Culvert Installation
- Broad Based Dips
- Filter Fabric Construction
- Straw Bale Filters
- Ditch Details
- Maps & Plans
- Access Road Plan
- Well Site Plan
- List of Symbols

10.0 ADDITIONAL REQUIREMENTS FOR EPCRA SECTION 313 FACILITIES

Not applicable. The site does not meet the criteria for EPCRA Section 313 reporting.

11.0 SIGNATORY REQUIREMENTS

The Preparedness, Prevention and Contingency Plan certification signature is included in Section 1 and signed by a signature authority as required.

12.0 PLAN REVISION AND RECORD RETENTION

The following documents related to this Preparedness, Prevention and Contingency Plan shall be kept on file for a period no less than three years:

- Inspections Records
- Corrective Action Documentation
- Training Records
- Annual Inspection Reports
- Spill Reports

This plan shall be amended whenever:

- There is a change in site construction, operation, or maintenance that may affect the discharge of significant quantities of pollutants to water, air, or land of the state.
- If a site inspection indicates the need for a plan amendment.
- If the project is found to be in violation of any of the discharge permit conditions.

A record of amendments and description of the amendments shall be signed by the Signature Authority and maintained in accordance with this section. This is included in Section 2.

RANGE

INCIDENT REPORT

Environmental & Safety
V2007-1

LOCATION:		DISTRICT:	
DEPARTMENT:		FIELD	
REPORTED BY:		PHONE # :	
NOTIFIED BY:		PHONE #:	
WITNESSES:		PHONE #:	
DATE OF INCIDENT:	TIME:	DATE REPORTED:	
PHOTOS TAKEN?	YES ☐ NO ☐	IF YES, SENT TO:	
INCIDENT:	RANGE ☐ CONTRACTOR ☐	CONTRACTOR/OTHER:	

INJURY:	PROPERTY DAMAGE:	ENVIRONMENTAL:
Injured Party: _____ Injury Type: _____ ____ Lost Days (if applicable) ____ Date Returned to Work (if applicable)	_____ ☐ Other: _____	☐ Spill Volume ____ ___ ☐ Spill Recovered ____ bbls ☐ Water ☐ Hydrocarbon ☐ Emulsion ☐ Gas ☐ Gas Leak Volume ____ ___ ☐ Public Impact / Complaint ☐ Emission Limit Type ____ ☐ Regulatory Action
OSHA: _____	Env Reportable? YES ☐ NO ☐	PROCESS LOSS: _____ Other (Specify) ____ Total Estimated Cost: ____ AFE # (If applicable): ____
		TERRAIN AFFECTED: _____

PERSONNEL/GOVERNMENT AGENCIES NOTIFIED (IF MORE SPACE REQUIRED, PLEASE LIST ON SEPARATE SHEET)

DATE NOTIFIED:	AGENCY CONTACT PERSON:	CONTACT PHONE #:	AGENCY/RANGE DEPARTMENT:

Clearly describe how the incident occurred (ex: who, what, when, where, why and how. Address all items checked above. Include recent trends based on risk assessments and observations. Update this section as information becomes available.

Date	Description

☐ Following Procedures	☐ Following Procedures	☐ Following Procedures
☐ Use of Protective Methods	☐ Use of Protective Methods	☐ Use of Protective Methods
☐ Inattention/ Lack of Awareness	☐ Inattention/ Lack of Awareness	☐ Inattention/ Lack of Awareness

REMEDIAL ACTIONS (to reduce or eliminate the direct and indirect causes)

Description	Target Date	Completed Date	Action By

Please E-Mail Completed Form to mhansen@rangeresources.com or fax to (817) 869-9168 attn: EHS Dept.

RANGE RESOURCES

June 3, 2009

Mr. Vince Yantko
Pennsylvania Department of Environmental Protection
California District Office
25 Technology Drive
Coal Center, Pennsylvania 15423

Dear Mr. Yantko:

Subject: Incident Report
Range Resources – Appalachia LLC
Cross Creek County Park Well Nos. 14H, 15H, and 16H
Well Permit Nos. 37-125-23165-00, 37-125-23182-00, and 37-125-23300-00
Hopewell Township, Washington County, Pennsylvania

Range Resources – Appalachia, LLC (Range Resources) is submitting this letter as an incident report regarding the spill incident that occurred at the Cross Creek County Park Well Nos. 14H, 15H, and 16H in Hopewell Township, Washington County, Pennsylvania. The Cross Creek County Park Well Nos. 14H, 15H, and 16H are permitted by the Pennsylvania Department of Environmental Protection (PADEP) Bureau of Oil & Gas Management under Permit Nos. 37-125-23165-00, 37-125-23182-00, and 37-125-23300-00, respectively. This submittal contains the following information regarding the incident:

- A description of the incident, including the cause of the incident and notifications that were made;
- Actions taken to contain the release;
- Actions taken to recover the spill; and
- Actions to be taken to prevent a similar incident in the future.

Description of Incident

On May 26, 2009, Range Resources was pumping flowback water from the hydraulic fracturing (fracing) of the three wells. The water was being conveyed through a 6-inch diameter high density polyethylene (HDPE) pipe from the well locations to the Lowry impoundment. The Lowry impoundment is permitted for the collection/storage of flowback water by the PADEP with a Dam Permit for a Centralized Impoundment Dam at Marcellus Shale Sites (Permit No. DOG6309-001).

The majority of the HDPE was welded using a fusion welder. However, 3 sections of HDPE pipe were connected via bolted, flanged couplings. Couplers were used in this location so that

the piping could be installed in the culvert under the temporary access road to the Hamilton farm pond. All piping was put in place and the couplings were connected. Then, prior to pumping fluid through the HDPE pipe, the pipe was pressure tested to 100 pounds per square inch (psi) to ensure that the couplings were properly installed and there were no leaks in the pipe. A copy of the records from the pressure testing of the pipe is included with this submission. These records show that the pressure was held for 30 minutes with no drop in pressure, indicating that there were no leaks in the pipe at that time.

At approximately 1:30 pm, a Range Resources contractor was walking the pipeline and discovered a leak at 2 of the couplings. The leak was approximately 500 feet from the location of the 3 wells, just below the Hamilton farm pond. At that time, notification was made to the appropriate Range Resources employees who immediately responded to the location to assess the incident and respond. He also made notification to additional Range Resources employees for response purposes.

Range Resources personnel immediately shut down the flowback operation when the leak of flowback water was discovered. Upon further investigation, Range Resources personnel determined that the water had leaked from the pipe at the location of 2 of the couplings due to the fact that 3 of the bolts for each of the couplings were loosened. Range Resources was unable to determine how the bolts, all on the underside of the couplings, were loosened. Due to the loose bolts, the water leaked, pooled in a low spot of the existing ground surface at the location of the leak, and then flowed via overland flow into an unnamed tributary to Cross Creek. When Range Resources personnel had assessed the situation, DEP personnel were then notified via telephone at approximately 5:15 pm. The attached photographs show the location of the leak.

Actions Taken to Contain the Release

Upon discovering the incident, Range Resources personnel immediately took steps to attempt to contain the release. The flowback of the well was immediately shut down so that no more flowback water would flow through the pipe. Additionally, several check dams were constructed in the unnamed tributary to Cross Creek in an attempt to prevent the flowback water from being conveyed downstream to Cross Creek and Cross Creek Lake. The couplings on the pipeline were then tightened to eliminate any future potential for leaks. The remainder of the flowback water was then trucked to the impoundment location for collection/storage instead of pumping through the pipeline to prevent any additional incidents from the piping.

Actions Taken to Recover the Spill

Flowback water that was contained by the check dams installed in the unnamed tributary was pumped out by a vacuum truck in locations that were accessible. Additionally, any soil affected by the spill of flowback water was excavated from the area and placed in three lined dumpsters on site. Sampling and analysis of the soil in the dumpsters will be performed to determine the final disposition of the soil. The entire area of disturbance was immediately seeded and mulched. The attached photographs show the area following soil removal and seeding and mulching.

Actions to be Taken to Prevent a Similar Incident in the Future

In the future, the use of bolted flanged couplings will be minimized or eliminated on piping being used to convey flowback water. Additionally, line inspections will be performed more frequently, especially at bolted flanged connections. When pumping is ceased between stages of water conveyance, all flanged connection integrity will be verified. If required, the connections will be tightened prior to commencement of pumping water through the piping for the next stage. Finally, if possible, spill containment kits will be located along the line where there are bolted connections.

If you have any questions, or require any additional information, please call me.

Very truly yours,

RANGE RESOURCES – APPALACHIA, LLC

Carla L. Suszkowski, P.E.
Environmental Engineering Manager

Enclosures

Bobcat Pressure Control, Inc

Coiled Tubing, Nitrogen & Fluid Pumping Services

Field Invoice Ticket

P.O. Box 1192
3271 US Highway 287 South
Decatur, Texas 76234

Phone: (940)-626-1504
Fax: (940)-626-1506

CT 91-1
Ticket № 003822
Date(s): 5-16-09

Bill To:	Range Resources
Address:	380 Southpoint Blvd Suite 300
City:	Cannonsburg, PA. 15317
Well #:	Lanky #3
Field:	
County, State	Washington, PA

Invoice:	
Inv. Date:	
SRO #:	
PO #:	
AFE #:	
Job Description	BSI - Fluid Star Pipeline

Product Code	Description	Unit	Qty	Rate	Invoice Amount
	SERVICE CODE				
	* CTU, 8 HR. MINIMUM, PER DAY				
	* CTU, ADDITIONAL HOURS, PER DAY				
	* PIPE USAGE				
	* ABRASIVE/CORROSIVE PIP CHARGE PER FOOT				
	* STRIPPER RUBBER USAGE, PER DAY				
	* B.O.P. EXPENDABLES				
16-01801	FLUID PUMP, 2 HOUR MINIMUM, PER DAY		1	2837	2837
	FLUID PUMP, ADDITIONAL HOURS, PER HOUR				
	NITROGEN PUMP, ___ HOUR MINIMUM PER DAY				
	NITROGEN/TRANSPORT MILEAGE, PER MILE				
	NITROGEN/TRANSPORT, PER HOUR				
	NITROGEN PUMP, ADDITIONAL HOURS PER HOUR				
	NITROGEN PRODUCT, PER 100 SCF				
	CRANE TRUCK (8 HOUR MINIMUM), PER HOUR				
	CREW TRUCK MILEAGE, PER MILE				
	CTU MILEAGE, PER MILE				
16-10330	PUMP/TRANSPORT MILEAGE, PER MILE		50	4.50	225.00
	DATA ACQUISITION SYTEM, PER DAY				
	HYDRAULIC FLOW CROSS, ___ K, PER DAY				
	K B.O.P., SINGLE, PER DAY				
	FLANGED TREE CONNECTION, PER DAY				
	RING GASKET EACH				
	WASH TOOL W/CONNECTION, DUAL, BPV, WASH TIP				
	FUEL SURCHARGE				
	SUBSISTENCE				
	LUBRICATOR				
	Pump into BSI Tank [illegible]				
	[illegible]				
	285 [illegible]				
					3062.00

Matt Warner
(Print Name)

MEW
(Signature)

CUSTOMER/AGENT - FIELD APPROVAL

Employee Name	Job Hrs.	Travel Hrs.	Employee Name	Job Hrs.	Travel Hrs.
William Whitehead 1828	7	2	Fluid Pump 5219		

BOBCAT PRESSURE CONTROL, INC
Coiled Tubing, Nitrogen & Fluid Pumping Services

TK# 3822.

DAILY JOB REPORT

Customer: RANGE
Field:
Well #: LAWRY

Date: 5-16-09
Completed By: WILLIAM WHITEHEAD

From	To	Description
11:00	11:10	ON LOCATION
11:10	11:20	JSA
11:20	11:45	ON STANDBY - WAITING ON PIPE TO BE FINISHED
11:45	12:20	RIG UP & PRIME PUMP
12:20	15:15	STAND BY
15:15	16:30	STARTED PUMPING @ 1.75 BBL/MIN
16:30	17:30	INCREASED RATE TO 4.5 BBL/MIN
17:30	18:00	STOPPED PUMPING @ 100 PSI - STAND FOR [illegible]
18:00	18:30	BLED OFF PSI - RIG DOWN
		[illegible]
		[illegible]
		225 130

Estimated Daily Cost:

Total Hours Worked:

Crew members

WILLIAM WHITEHEAD 1828

Company Rep: MEW
Signature

Date: 5-16-09

PHOTOGRAPHS

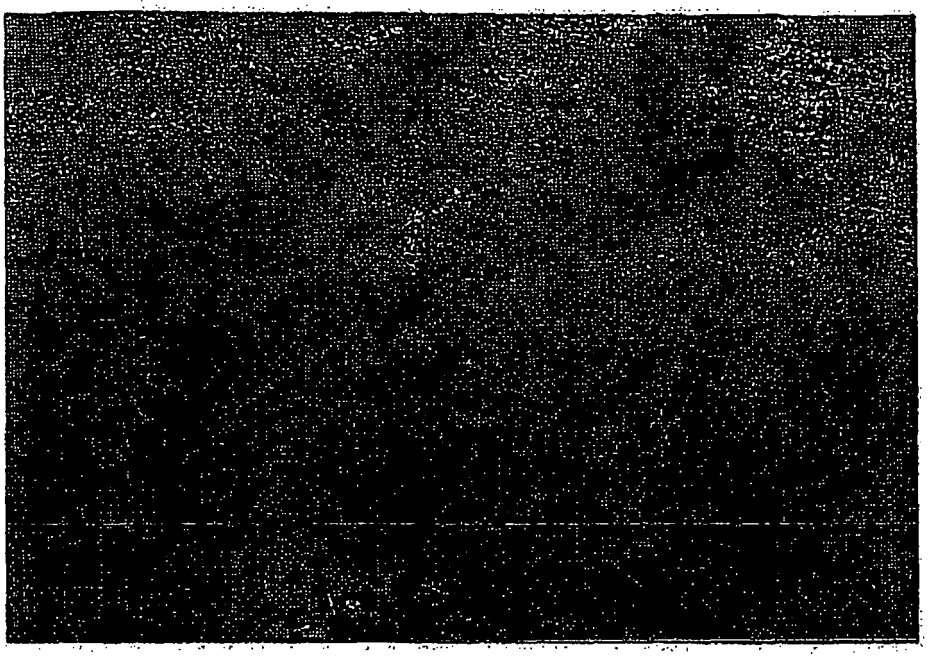


PHOTO #1

Coupling where loose bolts were found and leak occurred. Picture was taken after clean-up and water in low spot at pipe is fresh water.

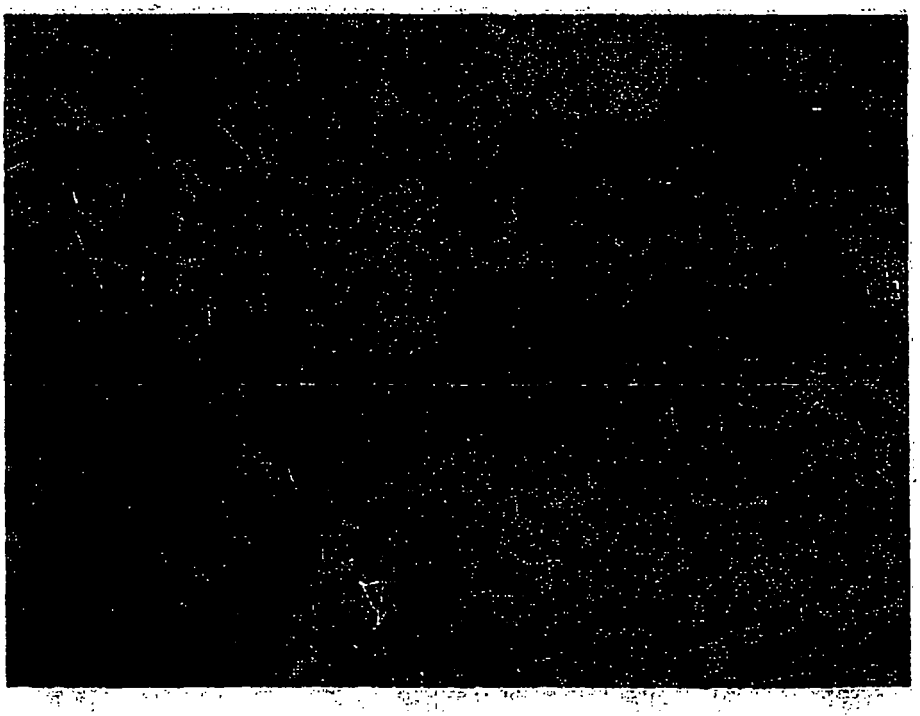


PHOTO #2

Coupling where loose bolts were found and leak occurred. Picture was taken after clean-up and water in low spot at pipe is fresh water.

PHOTO #3
Down slope area affected by spill following clean-up and seeding and mulching

PHOTO #4
Down slope area affected by spill following clean-up and seeding and mulching

RANGE RESOURCES

October 8, 2009

Mr. Vince Yantko
Pennsylvania Department of Environmental Protection
California District Office
25 Technology Drive
Coal Center, Pennsylvania 15423

Dear Mr. Yantko:

Subject: Incident Report
Range Resources – Appalachia LLC
Kearns Unit Well Nos. 1H, 2H, 3H, 4H, 5H and 6H
Well Permit Nos. 37-125-23274, 37-125-23275, 37-125-23640, 37-125-23644, 37-125-23641, and 37-125-23642
Hopewell Township, Washington County, Pennsylvania

Range Resources – Appalachia, LLC (Range Resources) is submitting this letter as an incident report regarding the spill incident that occurred in conjunction with the fracturing operations on the Kearns Unit Well Nos. 1H, 2H, 3H, 4H, 5H and 6H in Hopewell Township, Washington County, Pennsylvania. The Kearns Unit Well Nos. 1H, 2H, 3H, 4H, 5H and 6H are permitted by the Pennsylvania Department of Environmental Protection (PADEP) Bureau of Oil & Gas Management under Permit Nos. 37-125-23274, 37-125-23275, 37-125-23640, 37-125-23644, 37-125-23641, and 37-125-23642, respectively. This submittal contains the following information regarding the incident:

- A description of the incident, including the cause of the incident and notifications that were made;
- Actions taken to contain the release and recover the spill; and
- Actions to be taken to prevent a similar incident in the future.

Description of Incident

On Tuesday, October 6, 2009, Red Oak Water Transfer (Red Oak) was pumping diluted flowback water from Range Resources' Bednarski Impoundment to the Kearns frac. The water was being conveyed through an approximately 6-mile long run of 8-inch diameter PVC pipe that had been pressure tested prior to pumping the diluted flowback water. The pipe was hydrostatically pressure tested using fresh water to 150 psi on Thursday and Friday, October 1 and 2, 2009. The straight sections of pipe were connected with couplers specifically for this type of pipe to prevent leaks; however, at connections such as elbows, the connections were glued. The piping held the pressure

when pressure tested with fresh water. The piping was laid through a culvert under Cherry Road with a 90 degree elbow in the piping on the upstream end of the culvert and the piping then went up a hill. This elbow was glued.

On October 6, 2009, Red Oak was transferring the water at a rate of 22 bbls per minute and an approximate pressure of 140 psi. In an effort to keep a sufficient supply of water in the Kearns Impoundment for the frac, the rate of pumping was increased to 25 bbls per minute with an approximate pressure of 145 psi. At approximately 7:00 pm, Red Oak noticed that they had lost pressure in the line and immediately turned the pumps off. The Red Oak employee discovered that at the 90 degree elbow connection at the culvert had broken loose and had ruptured (N40° 12' 39.6" and W80° 23' 51.2"). He immediately reported to Matt Werner and Jeremy Matinko of Range Resources that the line had ruptured at the 90 degree elbow connection and the diluted flowback water had spilled. Matt Werner of Range Resources calculated that approximately 250 barrels of the diluted flowback water had spilled out of the piping onto the ground. At the location of the elbow, the piping was laying in an unnamed tributary to Brush Run. Brush Run is a tributary to Buffalo Creek, which is a High Quality waterway.

Jeremy Matinko reported the spill to the PADEP Oil and Gas Inspector (Richard Freese) at 7:40 pm. He also went out to the site to observe and respond to the spill. In addition to Jeremy reporting to Richard Freese, Carla Suszkowski phoned Mike Arch, the PADEP Inspector Supervisor, and reported the spill. The primary contributing factor that led to this failure was found to be a defective elbow coupling that parted during the pumping process.

Actions Taken to Contain the Release and Recover the Spill

Upon discovering the incident, Range Resources personnel immediately took steps to attempt to contain the release. As previously stated, Red Oak personnel immediately shut down the pumps and flow was halted through the pipe. A vacuum truck was used to clean out 500 gallons of the spilled water that was contained in low areas in the tributary. In addition, absorbent material was also used in the immediate area of the spill to soak up residual fluid. The area was also flushed with approximately 1,200 gallons of fresh water.

Within 1 hour of the spill, Red Oak had reconnected the pipe at the elbow and had resumed pumping. They reconnected the pipe with a similar glued connection. They continue to monitor and walk the pipeline every 30 minutes to help to ensure that a similar incident does not occur again.

A sample of the diluted flowback water was taken from the piping and sent for characterization. The results are given below:

- pH = 7.7
- Chloride = 11,000 mg/L
- Specific Gravity = 1.015
- Hardness = 37.4 mg/L
- Calcium = 1503 mg/L
- Iron = 3 mg/L
- Bicarbonate = 146 mg/L

Range Resources took part in the inspection conducted by the PADEP on October 7, 2009. At the time of the inspection, the PADEP identified a loss of approximately 200-300 minnows, collectively weighing less than 1 pound. At the time of the inspection, the PADEP also went upstream of the point of the spill and identified what appeared to be a sewage discharge into the unnamed tributary. No samples of the discharge could be collected because no sample bottles were available.

Actions to be Taken to Prevent a Similar Incident in the Future

To prevent a similar incident in the future, Range Resources is in the process of developing a Water Transfer Operating Standards to include as an Appendix to our Preparedness, Prevention, and Contingency (PPC) Plan that contractors will be required to follow when installing and using above-ground pipeline for flowback water pumping. Range Resources anticipates that some of the safe-guards to be included in this plan are:

- Detailed description of how the hydrostatic pressure test shall be conducted and how the pressure shall be determined for testing;
- Procedures for addressing leaks during hydrostatic pressure testing;
- Detailed procedures for piping run through culverts under roads;
- Procedures for the installation of check valves at low points to prevent spills if a piping failure does occur;
- Description of the line inspections to be performed by the contractor, frequency of the inspections, and documentation of the inspections;
- Descriptions of the location of spill containment apparatus and procedures to be followed if a piping failure occurs near a stream;
- Procedures for addressing leaks that occur during operation; and
- Procedures to drain lines, contain fluids, repair the line and re-pressure test the pipeline.

In addition to the development of this plan, Range Resources will review our Preparedness, Prevention, and Contingency (PPC) Plan for Washington County and

make appropriate changes to the plan in light of this incident. Both of these plans will be submitted to the PADEP by October 16, 2009, unless requested otherwise by the PADEP.

If you have any questions, or require any additional information, please call me.

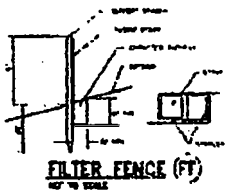
Very truly yours,

RANGE RESOURCES – APPALACHIA, LLC

Carla L. Suszkowski, P.E.
Environmental Engineering Manager

cc: Jack Crook, PADEP Southwest Regional Office
Alan Eichler, PADEP Southwest Regional Office
Michael Sherman, PADEP Central Office
Barbara Sexton, PADEP Central Office

Call Before You Dig!
1-800-242-1776



FILTER FENCE (FT)

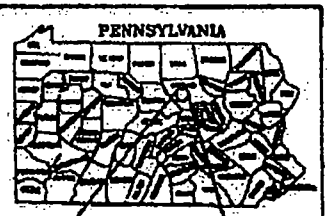
NOTES:

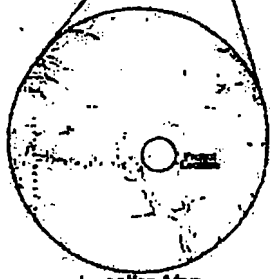
PROPOSED FRACKING POND

BOTTOM ELEVATION: 1777.0'
BERM ELEVATION: 1792.0'

DESIGN INFO:
INSIDE SLOPES: 3:1
OUTSIDE SLOPES: 2:1
POND BOTTOM SLOPE: 1%
BERM WIDTH: 15'

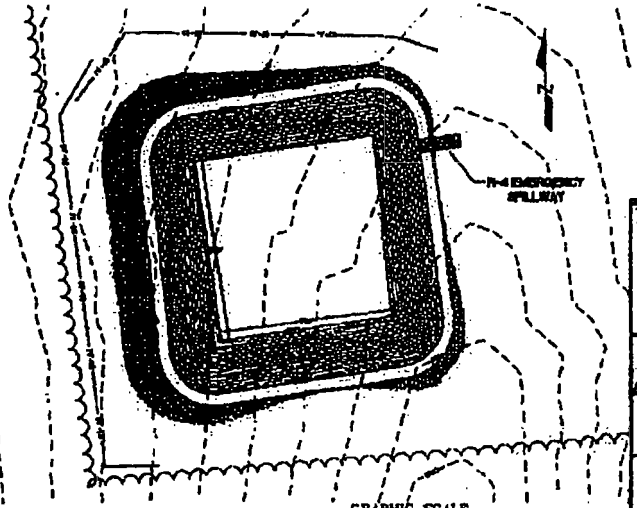
Pond Volume:
6,677,329.67 gallons (U.S.)
158,984.04 barrels (petroleum)





Location Map
Portion of U.S.G.S.
Quadrangle

GRAPHIC SCALE



GRAPHIC SCALE

Proposed Fracking Pond
For
Range Resources-Appalachia LLC
Cogan House Township
Lycoming County
Commonwealth of Pennsylvania

Hawbaker Engineering

Layout Plan

1 of 1

I:\CAD\Sidepro\Range Resources\dwg\325 ... dwg, 5/22/2008 3:53:23 PM, 1:1.53488

Appendix D

Preventive Spill Plan

The purpose of this portion of the PREPAREDNESS PREVENTION AND CONTINGENCY PLAN (PPC) is ensure that adequate engineering controls are designed and utilized to minimize the potential of a spill being created due to a failure. This protocol allows for the standard practice of defining a quality control process or process safety management which assesses the process flow as a means to maintain continuous improvement during the transferring of liquids. The Management of Change procedure will be implemented to ensure that like parts are utilized and an approval of the change has been authorized by a competent Range Resources representative. In order to achieve this, the processes will be separated into various sections that have the potential to have a spill. For each section, the process control, engineering review of equipment and means to ensure that all contractors and Range Resources' personnel are aware of the processes involved and are trained accordingly.

The quality process will highlight the following areas:

TRAINING

Contractor: Range Resources will provide documented training on the PPC Plan to ensure that all contractors are aware of its function and issue them a traceable copy (controlled document). Each copy of the PPC Plan will be assigned a number referencing that contractor's name. A log of the issuance will be maintained by the Range Safety Department in Canonsburg, PA. The contractor will be instructed that it is necessary for their copy to be present with their employees when they are conducting business for Range or when they are present on any Range site. Copies of the issued PPC Plan can be reproduced and distributed to their employees as necessary.

It is the responsibility of the contractor to provide training to their employees that will be in a position that requires them to act in the event of a release (leak or spill). These employees will need to understand the function of the PPC Plan along with the reporting structure that must be

followed. Range has the right to require that these employees understand and follow the protocol established to ensure that failures do not occur. Failure to follow these work requirements could jeopardize the contractor's ability to conduct business with Range in the future.

Contractor Employees: In an effort to eliminate the potential for releases, it is the responsibility of the contractor to provide adequate training to its employees so that they have a level of competency to perform their tasks proficiently. Each employee should understand and recognize hazards within their areas of operation that could pose harm to personnel or the environment. Employees should recognize that specified equipment is being installed and should ensure that any substitutions of equipment or materials follow an approved Management of Change process.

Any new employees hired by the contractor must be trained on the PPC Plan process. The contractor will be subject to audit by Range at any time to ensure that complete records are being maintained. It is the responsibility of the contractor to ensure that this procedure is being followed.

LIQUID TRANSFER

The transfer of fluids results in the largest risk with respect to the potential for spills which may impact the environment. Water is transferred through above ground piping in several different scenarios including, but not limited to:

- Centralized Water Impoundment to Centralized Water Impoundment
- Centralized Water Impoundment to Well Pad Storage Tanks
- Well Pad Storage Tanks to Blender
- Wellhead to Flowback Tanks
- Flowback Tanks to Centralized Water Impoundment
- Flowback Tanks to Production Storage Tanks

Range Resources has developed Construction, Operation, and Testing Standards which will be provided to all contractors installing or operating aboveground pipeline in any of these instances. The contractor will be provided training on the standards described in the plan and will be provided a copy of the standards. It will be the responsibility of the contractor to train all personnel that will be working on the pipeline on the standards and document that the personnel have been trained. Any contractor not following the standards detailed in this plan will jeopardize their right to do future work with Range Resources.

PROCESS CONTROL

Process control is a means of identifying the type of work being performed, materials to be required and a plan to install or rig up such equipment. The process will require that the flow material be engineered to meet the specifications set forth by Range for the task at hand.

Range expects that contractors will be able to professionally engineer a process that identifies materials required and that will perform the needs taking into account terrain, location size, restrictions and weather conditions as well to eliminate failure. Any additional fail-safe measures should always be recommended as new technologies are developed to minimize risk.

MANAGEMENT OF CHANGE

In formalizing a substitution process for equipment or materials, Range will utilize a process taken from Process Safety Management (29 CFR 1910.199). The use of Management of Change within this sector requires the need to ensure that the components being replaced have been selected based on their ability not to compromise the specifications of the original equipment or materials. Therefore, accurate specifications of the original equipment must be maintained in order to maintain integrity. Once a replacement product has been selected, the Management of Change must be approved by a Range representative. In some cases, supportive documentation may be requested.

Management of Change not only addresses maintenance but it also addresses what should be done should a change in the process itself be required. An approval of the change would still be documented and required by a Range representative. All personnel involved in the process will need to be trained in the understanding of the change and what modifications will need to be made.

ENGINEERING STUDY OF EQUIPMENT

The type of equipment being used to conduct the process will need to be selected based on the performance required. The specifications will be the responsibility of the contractor. The contractor will mark all transfer equipment with the pressure ratings, classification and owner's name on each section. The transfer equipment described are the sections of transfer piping, fittings or fluid transfer hoses. All gasket materials used to make connections must be inspected prior to each use in order to assure integrity. Any gaskets not deemed to be suitable will be replaced immediately. Spares should be maintained at all times so as not to compromise the transfer equipment.

Any connections that require mechanical means to secure them should ensure that the instruments are functional. Any plumbing that can become loose due to vibration must use locking mechanisms. The type of the mechanisms utilized should be engineered to maintain their integrity throughout the project.

WORK PRACTICES

The tasks being conducted by all personnel in the operation are responsible to ensure that breaches are immediately addressed once discovered. During the Job Safety Analysis or Hazard Assessment Analysis, potential non-conformities will be identified and a means to monitor will be discussed. Personnel assigned to other duties may be asked to maintain vigilance on any equipment in their view of site or designated area. All personnel conducting tasks on the worksite must be competent in the performance of their duties. Certain job tasks require

certification. Any employee conducting these functions must have current valid certifications for specified equipment type being operated where applicable.

Any SSEs (Short Service Employees) that are working in the area will be assigned a mentor who will conduct on-the-job training. The mentor must ensure that the SSE comprehends the task being assigned and can carry it out proficiently. The SSE should not be allowed to operate any equipment unless they have been authorized to by the mentor or a qualified person.

STOP WORK authority is a practice that allows any employee with any company on the work site to stop the work being performed should there be imminent danger associated with any task being performed. This practice gives authority to all individuals to monitor the worksite and make decisions that can prevent the damage to the environment, equipment or injury to any employee. The incentive for this practice is to encourage personnel to look for situations that can cause a disruption to the operation without retribution.

REPORTING STRUCTURE

A general reporting structure has been developed for all Range sites in Washington County. The flowchart of this structure is attached. No names are provided in the flowchart, due to the fact that the names may change based on the project or job task being performed. This flowchart will be reviewed on each site with all personnel performing tasks during the job and names will be assigned and phone numbers will be provided for each general job title provided on the flowchart. The flowchart will be provided to each person working on the job for their use if an incident occurs that requires reporting.

NON-COMFORMANCE

Non-conformities define the failure in either a process or a failure of equipment or materials. In order to minimize the probability of a failure, competencies must be met. All non-conformities

must be reported immediately and the corrective measures implemented. Once the control of the failure has been completed, the investigative process shall be initiated.

Bearing in mind that the term non-conformity can apply to operational issues as well as equipment functionality poses the need to ensure that personnel perform accordingly. In order to minimize equipment failure, it is imperative that personnel provide adequate maintenance and inspections. Failure to provide these services will be considered a non-conformity and corrective measures must be implemented immediately to ensure that these vital needs are met.

CORRECTIVE MEASURES

For a release, a corrective measure implies that all resources will be deployed to restrict the potential for damage to the environment. Barriers such as booms and absorbent materials are available for use in areas that can assist in restricting the flow of the released material. Vacuum trucks will be utilized where possible and remedial measure will be put in place to minimize impact.

DISPOSAL

The disposal of any liquid residual waste or produced water will be in accordance with Pennsylvania regulations and at those sites mentioned in Section 6.6 under Countermeasures of this document. These facilities have already been identified and authorized by Range Resources Regulatory Department and should not be deviated from.

Solid waste will be analyzed to determine if any hazards exist and will be disposed of according to state regulations. Identified Emergency Management contactors will be responsible for following regulations to ensure that Range complies accordingly. Any discrepancies or clarifications must receive approval from Range's Regulatory Department prior to movement of the solid waste.

REPORTING FLOWCHART/QUANTITIES